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# Lebanon

*Lebanon is positioned along the eastern coast of the Mediterranean Sea and serves as a gateway to the Asian, European, and African markets. Unlike many of its Arab neighbors, Lebanon is not a producer of oil and gas and has to import most of its energy. The country does, however, generate a modest amount of hydropower.*

*Note: Information contained in this report is the best available as of August 2004 and can change at anytime.*



## GENERAL BACKGROUND

For over four hundred years, Lebanon was under the rule of the Ottoman Empire until a 1920 French mandate established its present day boundaries. The Republic of Lebanon acquired its political independence from France in 1943. Lebanon is a small country, about half the size of New Jersey, and has been plagued by many years of civil war (1975-1990), foreign occupation and regional

political unrest. Even though Lebanon's economic and physical infrastructure were greatly damaged throughout the years of conflict, the Lebanese banking system, one of the largest in the Middle East, has remained solid. Throughout the war, Banque du Liban, Lebanon's Central Bank, closely supported the Lebanese currency, monitored loans, and maintained its reserves, while other commercial and private banks were flooded with funds to support the various militias involved with the war.

In the early 1990's, and under the tutelage of Prime Minister Rafik Al-Hariri, a self-made millionaire/businessman, Lebanon began to make great strides towards an economic and political revival. Along with the successful implementation of many reconstruction programs, such as Horizon, Solidiere, and others headed by the Council for Development and Reconstruction (CDR), the government was successful in creating a positive environment for both local and foreign investors. government efforts focused mainly on attracting global aid/investment, currency stabilization, as well as the repair and rehabilitation of electricity stations, telecommunications and water/sewage facilities.

Securing Lebanon's economic policy has been a top priority for the government. Since the end of the 15-year civil war in 1990, Lebanon has issued about \$12 billion in eurobonds in an effort to finance post-war rebuilding and the servicing of the country's large debt. Most holders of state eurobonds are Lebanese, notably commercial banks. In addition, the government passed an Investment Development Law, signed the Euro-Med Partnership Agreement with the European Union (EU), and awaits formal accession to the World Trade Organization (WTO), to which it was granted observer status in April 1999. Also, Lebanon is part of the Arab Free Trade Agreement (AFTA) an agreement among Arab member states in which goods are traded duty-free. Lebanon was successful in securing soft loans to help curb debt servicing in exchange for carrying out economic reforms at the 2002 Paris II Donors Conference, a joint program between the World Bank and the European Union (EU). Additionally, the government increased corporate and individual taxes and implemented a value added tax

(VAT). Since its introduction, the VAT has helped Lebanon face its deficit problems, with revenues from the tax representing more than 20% of the total proceeds of the government in 2003. And, for the first time in Lebanon's banking history, a March 2004 acquisition/merger agreement involving Banque Audi and Banque Saradar, two leading banks in the country, created Banque Audi-Saradar as the largest operating bank in Lebanon. This move has led other banks to contemplate the same consolidation/merger possibility.

Lebanon enjoys a relatively open economy with few restrictions on trade or the flow of funds. Lebanese financial laws also require secrecy in banking transactions. With the reopening of the Lebanese Stock Market, the government has been optimistic about the prospect of reclaiming the country's once prominent role as the financial/tourist center of the Middle East.

For the time being, the Lebanese economy remains somewhat sluggish. Real gross domestic product (GDP) growth projected at about 3% in 2004, up from 1.3% growth in 2003. Public debt is \$34 billion, 135% of the country's GDP, of which 46% is foreign debt. Unemployment is estimated at 12%-13%, but some analysts believe it could be as high as 25%. Investment law, judicial recourse, intellectual property rights, and business ethics are major challenges, dampening investor confidence and continuing to push a large part of the Lebanese workforce out of the country. Remittances from abroad, estimated conservatively at 25% of GDP, are considered to be a lifeline for what many families see as a no-growth economy. The government continues to be short of funds and is still pursuing the privatization of many of its public services. However, domestic and regional tensions will continue to negatively impact the overall pace of economic reform in Lebanon.

## OIL

Lebanon currently imports all of the oil it consumes, approximately 101,000 bbl/d of oil. Lebanon is not an oil producing country; although it is located near other Middle East countries that do produce oil, its geology is much different. According to a Lebanese government website, "2002 seismic results and other geo-physical data...suggest that there are structural and stratigraphic

features that exist offshore Lebanon. The Base Salt (Messinian Unconformity) reflector, which is widespread over the Eastern Mediterranean area, provides a regional cap rock (seal). Satellite oil seep detection studies performed over the Eastern Mediterranean conclude the existence of oil migration fairways, and this in turn necessitates the presence of source rocks in the Levantine Basin. Reservoir rocks are also available given their availability in the region."

As a result of its geographic location, Lebanon was once considered a refinery center for crude oil that was exported from Iraq and Saudi Arabia by pipelines to two Lebanese coastal refineries, Zahrani in the south, and Tripoli in the north. However, due to years of internal and regional political unrest and war damage, these refineries have not been operational. The Tripoli plant has been closed since 1982 and was the main source of oil supplies for Lebanon. While there are no current plans to restart the refineries, multiple sources indicate that the Tripoli refinery is subject to a potential rehabilitation program involving foreign investments.

Prior to the outset of the U.S.-Iraqi conflict, Lebanon and Iraq had signed an agreement that would allow Iraqi petroleum to be pumped from the Kirkuk oil fields to the port of Tripoli via the pipeline which passes through Syria. Due to continued political tensions, Lebanon has been denied oil from this pipeline. However, if the Zahrani plant becomes operational, it could receive crude oil from Saudi Arabia by sea. A pipeline, known as Tapline, links Zahrani with Saudi Arabia via the Israeli-occupied Golan Heights. The Tapline used to supply Jordan with around 65,000 bbl/d of oil before it was closed in 1990. It was originally constructed in the 1940s, with a nameplate capacity of 500,000 bbl/d, to export Saudi oil to the West (via Jordan to the port of Haifa, then part of British Palestine, now a major Israeli port city). Following the establishment of Israel in 1948, Tapline's terminal was diverted from Haifa to Sidon in Lebanon. Tapline continued supplying oil to Jordan until Saudi Arabia cut off its oil supply to Amman in 1990.

In 1960, the Lebanese Ministry of Natural Resources undertook an oil

exploration venture and claimed to have found oil. This oil was not extracted at the time, according to the government, due to economic reasons (the cost of extracting a barrel of oil was equal to its selling price at that time). However, more recent results of a seismic survey conducted by Spectrum (a British company) in Lebanese territorial waters -- 12 miles (19 kilometers) according to international law -- indicated that there are thirty-one sites containing oil reservoirs. The Lebanese government is very optimistic about this potential discovery and is creating laws to permit production sharing agreements (PSAs) with foreign oil companies. In addition to Lebanon's territorial waters, Spectrum will also study Lebanon's Exclusive Economic Zone (EEZ) stretching another 65 miles or so into the Mediterranean Sea beyond the country's territorial waters.

## NATURAL GAS

In an effort to comply with the UN framework on climate change, and also to trim its high energy bill of \$1 billion per year, the Lebanese government is in the process of converting its power generating plants from oil to natural gas. Lebanon is involved in the construction of a 20 mile natural gas pipeline, called GASYLE 1, that will link the Baniyas plant in Syria to the Deir al-Ammar/Beddawi power plant in northern Lebanon at first, and then from Beddawi to Zahrani, in the South, the only two Lebanese power stations currently fit to operate on natural gas. GASYLE 1 would allow Syrian natural gas from the Syrian Petroleum Company to flow into Lebanon for the first time providing some 53 million cubic feet per day of natural gas to Lebanon.

The Lebanese government has also launched the development of the GASYLE II an offshore pipeline intended to connect power plants located along the Lebanese coast (at Zahrani, Hreiche, Zouk and Jieh).

Lebanon is involved in a \$1 billion project with Jordan, Egypt and Syria to build an Arab Gas Pipeline that will provide liquefied natural gas (LNG) from North Africa to the aforementioned countries. The Arab Gas Pipeline will transport LNG from Egypt to Europe via Jordan, Syria and Lebanon. Syria and Lebanon will both become transit countries, as all the LNG flowing from



Egypt - and later on, from Iraq - will likely pass through them to Turkey and Cyprus. This pipeline will be connected to the Lebanese natural gas power plant in Zahrani by 2005 and will provide another 274 million cubic feet per day of natural gas to Lebanese power plants. Lebanon is currently working with Shell Global Solutions to develop a master plan for the utilization and distribution of natural gas in Lebanon which will include the future demand and supply of gas and distribution of gas, as well as the extension of the GASYLE pipeline.

## **ELECTRICITY**

Electricite du Liban (EdL), established in 1954, is Lebanon's main power company. This state-owned public utility operates under the of the Lebanese Ministry of Energy and Water Resources. EdL is in charge of power generation, transmission, and distribution. EdL generates well over 90% of all electricity used in Lebanon while the remainder is imported from Syria and acquired through private power providers. According to the Ministry, EdL currently spends \$400-\$500 million per year on fuel to produce 1,700-2,000 megawatts (MW) of electricity. The generation of electric energy in Lebanon is predominately thermal (fuel oil and diesel) plus a small amount of hydro power.

Lebanon has seven electricity generating plants: two steam, Zouk and Jieh (900 MW installed capacity); two gas turbines, Baalbek and Tyre (70 MW in each plant); one hydro, Hreiche (272 MW); and two combined cycle, Beddawi and Zahrani (435 MW each). The transmission system measures around 620 miles, and the transformer capacity is approximately 1,600 MW. All plants operate below their nominal capacity. Lebanon imports about US \$1 billion of fuel from Gulf countries for its power plants.

The Lebanese civil war greatly damaged EdL's power capabilities and caused intermittent power supply throughout the country. At the end of the war the government aimed to restore power capacity to 1,250 MW, with that goal being achieved by the end of 1996. The government then collaborated with the World Bank on the 1996-2000 Power System Expansion Program to

reform, reconstruct, and regulate the electricity framework in order to meet Lebanon's rising energy needs more efficiently and economically. In June 2002, Ansaldo-Siemens, an Italian-German company, worked with EdL to expand Lebanon's production capacity by 20%, an increase of 375 MW.

Lebanon currently purchases around 200 MW of electricity from Syria. Electricity imports began in 1995 and have since tripled. Lebanon plans to draw more power from others in the Middle East region via a six-way grid linking the countries of Jordan, Syria, Iraq, Egypt, and Turkey with Lebanon. This project will allow Lebanon to receive 300 MW in the short term and close to 600 MW in the medium to long term. Lebanon plans to expand installed power capacity to 2,100 MW by 2012.

In 2002, the Lebanese Parliament approved a draft law to privatize the electricity sector, a step that would increase EdL's efficiency and reduce its domestic debt. At least 40% of the company's worth (over \$800 million), would be sold to a strategic partner to participate in the generation and distribution side. This would include meter reading, billing and revenue collection, leaving EdL in control of transmission. However, plans for privatization have been postponed for the time being, leaving Lebanon with one of the world's highest prices for electricity price, \$0.137 per kilowatt hour. EdL continues to face high levels of unbilled electricity, power theft, and rotating power outages, while also reporting electricity theft of a staggering 23% of production.

However, by the end of August, the Deir Ammar-Beddawi power station will start producing electricity by burning natural gas instead of gas oil - a first for Lebanon. The Ministry of Energy and Water claims that EdL will be able to save millions of dollars annually by generating 90% of its total electricity from natural gas.

## **COUNTRY OVERVIEW**

**Head of State:** President Emile Lahoud

**Prime Minister:** Rafik Hariri

**Independence:** 22 November 1943 (from League of Nations mandate under French administration)

**Population (7/04E):** 3.8 million

**Population Growth Rate (2003E):** 1.3%

**Location/Size:** Middle East; Eastern Shore of the Mediterranean Sea; between Israel and Syria (about half the size of New Jersey)

**Major Cities:** Beirut (capital); Tripoli (to the north); Sidon and Tyre (to the south); and Zahle (to the east)

**Languages:** Arabic (official), French, English, Armenian; (At least 50% of the population is bilingual)

**Ethnic Groups:** Arab 95%, Armenian 4%, Other 1%

**Religion:** Christian (Maronite, Greek Orthodox, Greek Catholic, Roman Catholic, Protestant, Armenian Apostolic, other), Muslim (Sunni, Shi'a, other), and Druze

## **ECONOMIC OVERVIEW**

**Finance Minister:** Fouad Siniora

**Economy and Foreign Trade Minister:** Marwan Hamade

**Currency:** Lebanese Pound (LBP)

**Market Exchange Rate (8/13/2004F):** \$1.00 = 1,514 LBP

**Gross Domestic Product (GDP) (2003E):** \$18.2 billion

**Real GDP Growth Rate (2003E):** 2.0% **(2004F):** 3.1%

**Inflation Rate (Consumer Prices) (2003E):** 1.5% **(2004F):** 2.4%

**Unemployment Rate (2003E):** 18%

**Merchandise Exports (2003E):** \$1.5 billion

**Merchandise Imports (2003E):** \$7.2 billion

**Merchandise Trade Balance (2003E):** -\$5.6 billion

**Major (Export) Trading Partners:** Switzerland, Iraq, United Arab Emirates, Saudi Arabia, Syria, United States, Turkey

**Major (Import) Trading Partners:** Italy, France, Germany, China, United States, Russia, United Kingdom, Japan, Syria, Kuwait, Jordan

**Major Export Products:** Petroleum, fruits and vegetables, textiles, cotton

**Major Import Products:** Manufactured goods, machinery, food and livestock, chemicals and chemical products



**Total External Debt (5/04E):** \$16.3 billion

## **ENERGY OVERVIEW**

**Minister of Energy and Water Resources:** Ayoub Humayyed

**Oil Consumption (2003E):** 101,000 barrels per day (bbl/d) -- all imported

**Crude Oil Refining Capacity (1/1/04E):** 37,5000 bbl/d

**Coal Consumption (2002E):** 220,000 short tons

**Electric Generation Capacity (1/1/2002E):** 2.3 gigawatts (of which 88.1% is thermal and 11.9% is hydroelectric)

**Electricity Generation (2002E):** 8.1 billion kilowatthours (Bkwh)

## **ENVIRONMENTAL OVERVIEW**

**Minister of Environment:** Fares Boueiz

**Total Energy Consumption (2002E):** 0.23 quadrillion Btu (0.1% of world energy consumption)

**Energy-Related Carbon Dioxide Emissions (2002E):** 16.5 million metric tons (0.1% of world total carbon dioxide emissions)

**Per Capita Energy Consumption (2002E):** 63.0 million Btu (vs U.S. value of 339.1 million Btu)

**Per Capita Carbon Dioxide Emissions (2002E):** 16.2 metric tons (vs U.S. value of 20.2 metric tons)

**Energy Intensity (2002E):** 17,694 Btu per \$1995 (vs U.S. value of 10,575 Btu/\$1995)

**Carbon Dioxide Intensity: (2002E):** 1.26 metric tons/thousand\$1995 (vs U.S. value of 0.64 metric tons /\$1995)

**Fuel Share of Energy Consumption (2002E):** Oil (94.8%), Coal (2.4%), Hydro (1.1%), Net Electricity Imports (1.6%)

**Fuel Share of Carbon Dioxide Emissions (2002E):** Oil (96.4%), Coal (3.1%)

**Major Environmental Issues:** Deforestation; Air & Water Pollution; Waste Management

**Major International Environmental Agreements:** A party to Conventions on Climate Change, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Nuclear Safety, and Ozone Layer Protection

## ENERGY INDUSTRIES

**Organization:** Electricite du Liban

**Major Port:** Beirut, Tripoli, Saida

**Major Oil and Gas Fields:** N/A

**Major Pipelines:** GASYLE I; GASYLE II; Arab Gas Pipeline; Trans-Arabia Pipeline (Closed in 1981)

**Major Refineries:** Zahrani, Tripoli

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## LINKS

For more information from EIA on Lebanon, please see:

[EIA-Country Information on Lebanon](#)

Links to other U.S. government sites:

[US State Department](#)

[US Embassy in Beirut, Lebanon](#)

[CIA World Fact Book](#)

[US International Trade Commission](#)

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[World Bank](#)

[Lebanon Embassy in Washington DC](#)

[Daily Star News Paper](#)

[Middle East North Africa Financial Network](#)

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